

CLAIMS

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1. A method of strengthening a fired, porous ceramic core for use in investment casting, comprising:
 - impregnating the core with an aqueous emulsion of a water-insoluble polymer, and
 - drying the impregnated core to remove water.
2. The method of claim 1 wherein the water-insoluble polymer is selected from the group consisting of acrylic, styrene butadiene, polyvinyl acetate, styrene acrylic, vinyl acetate acrylic, vinyl-vinylidene chloride, epoxy, polyvinyl butyrol, and polyurethane.
3. The method of claim 1 wherein the aqueous emulsion comprises about 10% to about 60% of said water-insoluble polymer and balance essentially water.
4. The method of claim 1 wherein the aqueous emulsion comprises about 10% to 50% by weight of an acrylic polymer and balance essentially water.
5. The method of claim 4 wherein the acrylic polymer has a glass transition temperature from 15 to 40 degrees C.
6. The method of claim 4 wherein the aqueous emulsion comprises about 15% to 30% by weight of an acrylic polymer and balance essentially water.
7. The method of claim 4 wherein the acrylic polymer is self cross-linkable.

8. The method of claim 4 wherein the aqueous emulsion includes a cross linker for the water-insoluble polymer.
9. The method of claim 1 wherein the impregnating of the fired, porous core is achieved by immersing the core in the aqueous emulsion.
10. The method of claim 1 wherein the drying of the impregnated core is achieved by convection at superambient temperature.
11. A method of strengthening a fired, porous ceramic core for use in investment casting, comprising impregnating the core with an aqueous emulsion of a water-insoluble acrylic polymer and drying the impregnated core to remove water.
12. A fired, porous ceramic core for use in investment casting including water-insoluble polymer in pores of said core.
13. The core of claim 12 wherein the water-insoluble polymer is selected from the group consisting of acrylic, styrene butadiene, polyvinyl acetate, styrene acrylic, vinyl acetate acrylic, vinyl-vinylidene chloride, epoxy, polyvinyl butyrol, and polyurethane.
14. The core of claim 13 wherein the core includes cross-linked acrylic polymer.
15. The core of claim 12 wherein the core includes about 0.2% to about 5% by weight polymer solids.